



Vol. XXV Issue No. 12

Winter 2008

Changes in the SC 2008 List of Reportable Conditions

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As authorized by South Carolina Statute #44-20-10 and Regulation #61-20, the S.C. Department of Health and Environmental Control (DHEC) updates the list of Reportable Conditions in January of each year. Revisions to the list of reportable conditions are based on many factors, including: 1) the need for DHEC to conduct surveillance on new conditions or to increase surveillance on certain existing conditions in order to protect the health of the public and 2) changes in reporting requirements from the U.S. Centers for Disease Control and Prevention (CDC).

The following revisions have been made to the 2008 List of Reportable Conditions:

New for 2008:

- Separate poster for laboratories that lists reportable test results.

Additions to the List of Reportable Conditions:

- Novel Influenza A Virus Infection (Not H1 or H3): added to Immediately Reportable Conditions.
- *Staphylococcus aureus* – methicillin resistant (MRSA) (Bloodstream Infection) (Lab only): added to conditions reportable within seven days.
- HIV testing, added:
 - HIV CDR co receptor (L)
 - HIV HLA-B5701 (L)
 - HIV subtype, genotype, and phenotype (L)

Other Major Revisions to the List of Reportable Conditions:

- Added “Paralytic and Nonparalytic” to Poliomyelitis
- Changed “Campylobacter enteritis” to “Campylobacteriosis”
- Moved *Vibrio* infections - all types, including *Vibrio cholerae* O1 and O139 - to the list of

Electronic Disease Reporting

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Electronic disease reporting continues to replace paper, both nationally and in South Carolina.

The purpose of this transition is to increase the quality of disease reporting, while easing the burden for providers and for state public health department staff. Two methods of electronic disease reporting are available to health care providers in South Carolina, and both are faster, more secure, and more complete than Disease Reporting Cards and forms sent through the mail.

Carolina's Health Electronic Surveillance System (CHESS) is a Web-based system through which providers can submit morbidity and lab reports to DHEC via a secure connection. The 24 providers currently using the system are no longer required to submit 1129 Disease Report Cards for most diseases. Reports submitted in this way reach public health staff much more quickly than in the past and contain much more complete information for use in disease investigations. All health care providers, regardless of the size of the practice, are welcome to participate.

Another option available to a growing number of laboratories is Electronic Lab Reporting (ELR). Electronic lab reports are transmitted directly from a laboratory's database, with no additional data entry

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(CHANGES IN THE SC 2008 LIST OF REPORTABLE CONDITIONS *cont'd from Page 1*)

Urgently Reportable Conditions within 24 hours.

- Moved Dengue and Yellow Fever to the list of Urgently Reportable Conditions within 24 hours.

Revisions to the Disease Reporting Card:

- Changed the order of the information.
- Revised the selections for race.
- Added "Diagnosis Date".
- Deleted the "Hepatitis Diagnosis" section.
- Added a space to check if there is a rash when reporting Rocky Mountain Spotted Fever and Lyme Disease.

Revisions to the List of Reportable Conditions Poster:

- Revised the information under "How to Report".
- Under "What to Report" added: (1) "Date of Diagnosis", (2) "If female, pregnancy status", and (3) "Status: In daycare or a food-handler."
- In footnote #2, deleted "(a) screening test (e.g., EIA antibody)"

The above changes may be found:

- On the DHEC Web site at:

<http://www.scdhec.gov/>
<http://www.scdhec.gov/health/>
<http://www.scdhec.gov/health/disease/index.htm>

- On the 2008 DHEC Disease Reporting Card (color is pink for 2008)
- On the 2008 List of Reportable Conditions poster.

Both the Disease Reporting Cards and the laminated posters (sizes 8 by 11 inches and 12 by 24 inches) are available from the DHEC regional public health departments or from the DHEC Division of Acute Disease Epidemiology in Columbia.

ELECTRONIC DISEASE REPORTING

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required. The availability of this option depends on the software vendor for the laboratory. Some laboratories are already using ELRs, while others will need to wait until their vendors' software is able to transmit the data.

Providers interested in either or both of these electronic reporting systems are encouraged to contact the Division of Acute Disease Epidemiology at DHEC by calling the CHES Help Line at 1 (800) 917-2093.

New List of Reportable Conditions for Laboratories

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In 2008 S.C. DHEC will introduce a separate *List of Reportable Conditions for Laboratories*. The purpose of this list is to reduce confusion regarding disease reporting responsibilities. The *List of Reportable Conditions for Laboratories* will include the reportable conditions for which there is a laboratory test. The list is conveniently divided into categories of Bacterial, Viral, Parasitic, and Other. The few conditions omitted from the laboratory list are those in which diagnosis is made based on clinical data, e.g. hemolytic uremic syndrome (HUS) or conditions which result in death, e.g. varicella or influenza deaths. Outbreaks, unusual disease, and clusters of cases remain as reportable situations on the laboratory list; however, the terminology "foodborne outbreaks" was omitted since the laboratorian is not likely to know the source of infection. Many other states have already developed separate lists for clinicians and labs. The hope is that by targeting different audiences with information based on their focus area, reporting will be easier and faster than ever.

Required Laboratory Reporting of Bloodstream Infections Caused by MRSA

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Laboratory reporting of bloodstream infections caused by methicillin-resistant *Staphylococcus aureus* has been added to the S.C. DHEC list of reportable diseases for 2008.

Two mechanisms of reporting may be used: 1) hospitals that use the Electronic Laboratory Reporting system should submit the reports to DHEC through this route; 2) hospitals that do not use the Electronic Laboratory Reporting system should submit hard copy reports once a week. Please note that specific information for each blood culture isolate is required and listed below.

The following codes for reporting must be used when submitting electronically:

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(REQUIRED MRSA LABORATORY REPORTING *cont'd from Page 2*)

- SNOMED code: L-24852 Methicillin resistant
Staphylococcus aureus
- LOINC code: 600-7 MICROORGANISM
IDENTIFIED BLOOD CULTURE

In addition, the following information must be added to the report that is submitted to DHEC:

1. Patient's name
2. Date of birth
3. Patient ID number: SSN, if possible, or hospital billing number
4. Sex
5. Date of collection of blood
6. Date of positive blood culture result
7. Whether specimen was drawn for a peripheral or central line (if known)
8. Name of laboratory processing the blood culture
9. Name of hospital/medical office or healthcare institution where the blood culture was drawn
10. Submit the antibiogram for the isolate

Outbreaks of Healthcare Associated MRSA:

Outbreaks of MRSA in healthcare facilities should be immediately reported to DHEC by the facility as defined on the Annual List of Reportable Conditions.

Reportable Conditions:

Community associated MRSA: Outbreaks of MRSA skin and soft tissue infections are associated with group settings where close contact may occur, such as childcare, athletic teams, prisons, and other residential facilities. Outbreaks can occur in schools, but are usually associated with an athletic team or other sharing of common equipment. Confirmed or suspected MRSA outbreaks should be reported to DHEC. Routine hygiene and cleaning practices are available on the DHEC and Centers for Disease Control and Prevention (CDC) web sites and are effective in preventing and controlling MRSA outbreaks.

Individual cases of MRSA skin and soft tissue infection occur commonly in all settings in the community and are not reportable. It is possible for several individual cases of MRSA skin and soft tissue infections to occur in the same group setting, such as a school, without evidence of close contact between the cases. In that event, several cases would not be considered an outbreak.

Syndromic Surveillance in South Carolina

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What is syndromic surveillance?

Syndromic surveillance is the systematic and ongoing collection, collation, analysis, and interpretation, in real-time, of health data needed to plan, implement, and evaluate public health practice and emergency response. The term "syndromic" applies to surveillance that uses health-related data gathered prior to diagnosis. Analysis of the data may signal sufficient probability of a case or an outbreak to warrant further public health response. Several data sources — both clinical and non-clinical — are used for syndromic surveillance. Clinical data sources include emergency department patient visits, laboratory testing orders, 911 calls, and ambulance dispatch. Prescription and over-the-counter drug sales and school or work absenteeism are examples of non-clinical sources. Unlike traditional surveillance, syndromic surveillance does not use actual diagnoses. Instead, symptoms (a patient's chief complaints) are used for clinical data, and presumed symptoms are used for some non-clinical data (i.e. "sick" or "not sick" for absentee data). The purpose of syndromic surveillance is to detect natural or man-made outbreaks of public health significance earlier than afforded by traditional surveillance. This allows public health agencies to understand and respond more quickly to large-scale outbreaks of public health significance.¹

South Carolina Aberration Alerting Network (SCAAN)

SCAAN is a collaborative network of syndromic systems within South Carolina. Currently the network includes the following data sources: South Carolina hospital emergency department chief-complaint data, poison control center call data, over-the-counter (OTC) pharmaceutical sales surveillance, and the U.S. Centers for Disease Control and Prevention's BioSense biosurveillance system. This issue of Epi Notes will focus on S.C. hospital emergency department syndromic surveillance. Information on other segments of the SCAAN system will be published in future issues of Epi-Notes.

SC Hospital Emergency Department Syndromic Surveillance**Data Acquisition**

Syndromic surveillance begins with the acquisition of chief complaint data from participating emergency departments. Currently, the Medical University of South Carolina (MUSC)

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(SYNDROMIC SURVEILLANCE IN SOUTH CAROLINA cont'd from Page 3)

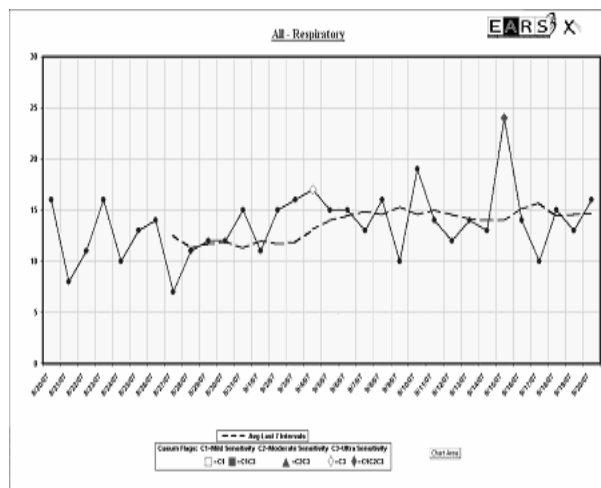
sends daily feeds of their emergency department patient chief complaints to DHEC. Greenville Hospital Systems will soon begin sending DHEC the same information. The data are gathered from existing patient information systems and electronically transferred through a simple and secure file interface to a central state server. Once the process for generating and transferring the data file has been established, the operation generally requires no personnel time. DHEC receives each day's information the following morning. The agency classifies chief complaint data into pre-determined syndromes.

¹ Buehler JW, Berkelman RL, Hartley DM, Peters CJ. Emerg Infect Dis 2003; 9(10):1197-1204

Data Analyses & Interpretation

The Early Aberration Reporting System (EARS) was developed by the CDC to analyze real-time public health surveillance data without needing background data. The system uses a running baseline — the average number of counts for a syndrome from a previous seven-day period. The system compares current syndrome counts with the previous week's average. It then performs cumulative sum (CUSUM) methods. For more information on EARS analysis, go to the following link: <http://www.bt.cdc.gov/surveillance/ears/>.

Below is a graphical output from the EARS software of the "Respiratory" syndrome category using data from a S.C. health care provider. During this one-month period, aberrations from the running CUSUM indicated days requiring further investigation. Patient chief complaints used to develop the "Respiratory" syndrome category included: "difficulty breathing", "chest cold", "pneumonia", "respiratory difficulty", "gasping", "pulmonary", etc.



Syndromic surveillance occurs prior to diagnosis, so interpretation of aberration requires a close working relationship between the data provider and DHEC. It is crucial to blend local "domain knowledge" (i.e. the health care facility) with awareness of broader public health issues (i.e. regional or statewide outbreaks, increased

national surveillance), so this collaboration is paramount. For example, if multiple aberrations (i.e. "flags") were to occur on multiple days, DHEC would contact the health care facility providing the data and talk to the facility's infection control specialist. Together, they would make casual inquiries or conduct a formal investigation to determine if the flags indicate a real event or a false positive. With additional experience and modifications, the number of false-positive flags will decrease. Regardless, the close working relationship between the health care system and DHEC will always be essential to both traditional and syndromic surveillance.

As with any surveillance system, there are limitations. It's always important to consider whether the data is representative and complete, whether the system is flexible, and other factors.

Hospital-based chief-complaint data analysis is another useful tool in monitoring and responding to events of public health significance. EPI Notes will discuss this and non-traditional sources of data in future issues.

DHEC will provide, free of charge, the software, support, and assistance to implement transfer, and analyze syndromic data. For more information on syndromic surveillance in South Carolina and how health care providers can participate, please contact Dan Drociuk (drociukd@dhec.sc.gov) or Himal Dhotre (dhotrehc@dhec.sc.gov).

DHEC Adds Human Illness with Avian or Novel Influenza A as Reportable Condition

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Infections and illnesses in humans with novel influenza A have been added to the "Report Immediately with 24 Hours" section of the S.C. 2008 List of Reportable Conditions. Novel Influenza A viruses are characterized as different from those currently circulating in humans (not H1 or H3 viruses). These viruses include those that are subtyped as nonhuman in origin and those that are unsubtypable with standard methods and reagents in commercial or state public health laboratories.

Goals of Novel Influenza A Surveillance:

The goals of Novel Influenza A surveillance include: 1) rapidly identifying and reporting infections and illnesses among humans with novel influenza A viruses to the S.C. Department of Health and Environmental Control (DHEC), 2) ensuring prompt confirmation of human novel influenza A virus infections; and 3) facilitating early initiation of appropriate public health responses.

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(HUMAN ILLNESS WITH AVIAN OR NOVEL INFLUENZA A cont'd from Page 3)

The addition of Avian or novel influenza A to the DHEC list of conditions that require an immediate report within 24 hours does not address the goals and methods of surveillance that will be needed during an influenza pandemic. When the transmission of a novel strain of influenza in the general population has become efficient and sustained, this new pandemic influenza strain will no longer be considered novel for the purposes of surveillance. Once widespread community transmission has been established (e.g., during World Health Organization Phase 6), methods other than individual case reporting by clinicians will be used to track pandemic influenza disease burden. Based on experience with seasonal influenza surveillance, notification of individual influenza cases is unlikely to be either practical or the best use of surveillance resources during this phase of a pandemic. Therefore, it is anticipated that other approaches will be used to track the pandemic and guide the public health response (e.g. reporting of aggregate numbers of influenza-related hospitalizations, tracking of rates of influenza-like illness, and tracking of pneumonia and influenza mortality).

Methods for Surveillance of Novel Influenza A:

Clinicians should immediately report, within 24 hours, human infections or illnesses related to novel influenza A virus to their local public health department. DHEC will coordinate with the clinician methods of laboratory testing and infection control guidance. State epidemiologists, in conjunction with public health laboratories, will report to the U.S. Center's for Disease Control and Prevention (CDC) all human infections with influenza A viruses that are different from currently circulating human influenza H1 and H3 viruses.

Polio Surveillance Update – Rationale for Maintaining Vigilance Both for: (i) Poliomyelitis, Paralytic and (ii) Poliovirus Infection, Nonparalytic

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Paralytic poliomyelitis has been a reportable condition in South Carolina for decades. In 2008, *non-paralytic poliovirus* infections will also become reportable. We briefly review here the current status of global polio elimination and explain the rationale for the new expanded surveillance efforts.

Polio in the United States: Tens of thousands of people, mostly children, were paralyzed by polio in the United States as recently as the early 1950s. But cases of domestically-acquired wild-virus paralytic poliomyelitis have not been seen since 1979, when an importation of the virus from the Netherlands led to an outbreak among under-immunized Amish communities in the Midwest.¹ The

elimination of polio in the United States was made possible by high vaccine coverage. Two types of vaccines were used — the Inactivated Polio Vaccine (IPV) or “Salk vaccine,” licensed in 1955, and the Oral Polio Vaccine (OPV) or “Sabin vaccine,” licensed in 1961.

Although wild-virus paralytic poliomyelitis disappeared from the U.S. after 1979, approximately 150 cases of a rare and serious complication of OPV called Vaccine Associated Paralytic Polio (VAPP) were reported between 1980 and 1999. With the aim of eliminating VAPP, the U.S. Advisory Committee on Immunization Practices recommended in 2000 that use of OPV be discontinued and that IPV be used exclusively.² Thus, OPV is no longer used in this country, and no cases of domestically acquired VAPP have been identified since 2000.

Polio in the World: In 1988 the World Health Assembly passed a resolution calling for the global eradication of polio. If this goal can be achieved, polio will become only the second infectious disease (after smallpox) to have been eradicated. Global polio eradication efforts have had a number of ups and downs, but overall progress has been astonishing. In 1988, an estimated 350,000 cases were occurring annually. In 2006, fewer than 2,000 were identified. This decline was seen despite intensive global surveillance for cases of acute flaccid paralysis (AFP). AFP cases serve as markers of possible paralytic polio and trigger epidemiologic and virologic investigations.

Currently, polio is thought to be endemic, with ongoing chains of transmission, in only four countries: Afghanistan, India, Pakistan, and Nigeria. Occasional cases are seen in other countries that do not have sustained transmission, but they can be traced back to importations from the four polio-endemic countries cited above.^{3,4} Progress towards eradication can be followed in near real-time on the Internet⁵ and is regularly reviewed in major medical journals.^{6,7} Currently, only polioviruses types 1 and 3 continue to circulate. Cases due to type 2 have not been seen in several years, and experts thus believe that type 2 has already been eradicated.

Challenge of Vaccine-Derived Polioviruses (VDPVs): In 2000-2001, an unexpected obstacle to global eradication was observed in Haiti and the Dominican Republic. Outbreaks of polio due to VDPVs — viruses that descend from OPV strains — were documented. Since then, similar outbreaks have been seen in Madagascar, Indonesia, China, and other countries where coverage with OPV has been allowed to fall, leaving an appreciable cumulative number of susceptibles in the population.⁸ Some circulating VDPVs (cVDPVs) have lost attenuation mutations and thus resemble wild-polio viruses in terms of pathogenic potential and ability to circulate. In addition, long-term shedding of immunodeficiency-associated VDPVs (iVDPVs) has been found in a small number of people with B-cell immunodeficiency. These individuals apparently lack the ability to produce antibodies that can

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(POLIO SURVEILLANCE UPDATE cont'd from Page 5)

efficiently halt viral replication. Thus, high levels of vaccine coverage must be maintained not only to protect populations from wild-type polio virus, but also against possible neuro-virulent VDPVs.

VDPVs in the United States: In 2005 a cluster of Amish children shedding poliovirus type 1 was identified in Minnesota. The index patient was a 7 month-old child with severe combined immunodeficiency (SCID). The child had been hospitalized continuously with failure to thrive, diarrhea, and recurrent infections. Poliovirus was unexpectedly identified in the child's stools when they were cultured for other enteroviruses. An investigation subsequently identified at least three other children in the index child's community who were also shedding poliovirus. The origin of the VDPV infections is not clear, but it likely came from importation. None of these children had been vaccinated against polio. Fortunately, none had paralytic disease. Concerns raised by this outbreak include its potential transmission to other communities with low levels of vaccination and the risk of a polio outbreak in the United States.⁹

Implications for Poliovirus Surveillance: As long as either wild poliovirus or VDPVs continue circulating anywhere in the world, the United States faces the possibility of virus importation. Maintaining high-vaccine coverage thus remains essential to forestall outbreaks that could occur following importations, especially if large numbers of susceptibles are allowed to accumulate. This is why South Carolina and other states are reinforcing polio surveillance by making even *non-paralytic poliovirus infection* reportable.

Addendum – Other issues related to polio: Practicing physicians may also encounter several other clinical entities that relate directly or indirectly to polio. The first is the so-called "Post-polio syndrome." Originally described in the 1970s Post-polio syndrome is characterized by weakening of muscles that were affected by polio years before — and sometimes even weakening of muscles seemingly not previously affected. Since there are perhaps 900,000 or more aging polio survivors still living in the United States it is not surprising that with the passage of time such cases may be diagnosed with increasing frequency.^{10,11} However, these cases present a personal health problem for those now affected, not a current infectious public health problem. Another clinical entity is that of poliomyelitis-like syndromes due not to poliovirus but to other viruses. These have been reported, for example, following infections with various non-polio enteroviruses¹²⁻¹⁴ and (more recently) West Nile Virus.¹⁵⁻¹⁷

Given the global situation described above, it remains essential to include polio in the differential diagnosis of any case of acute flaccid paralysis, and to perform appropriate diagnostic studies (e.g. stool cultures for enterovirus). This is especially crucial in situations involving recent foreign travel or contact with others who have recently come from polio-endemic or affected

countries. Confirmed cases of poliovirus infection of any type should be reported to DHEC, and consultation about suspect cases is advisable.

References:

1. CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases. 10th edition, 2007 (The CDC "Pink Book", Obtainable on-online in PDF format at www.cdc.gov/vaccines/pubs/pinkbook/pink-chapters.htm)
2. CDC. Poliomyelitis prevention in the United States: updated recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR May 19, 2000 / Vol. 49. No. RR-5.
3. CDC. Progress Toward Poliomyelitis Eradication – Pakistan and Afghanistan, January 2006-February 2007. MMWR April 13, 2007.
4. CDC. Progress Toward Poliomyelitis Eradication – Nigeria 2005-2006. MMWR March 30, 2007.
5. See www.polioeradication.org
6. Heymann DL, Aylward RB. Eradicating Polio. NEJM 2004;351:1275
7. Pallansch MA, Sandhu HS. The Eradication of Polio – Progress and Challenges. NEJM 2006; 355:2508.
8. CDC. Update on Vaccine-Derived Polioviruses. MMWR October 13, 2006.
9. CDC. Poliovirus Infections in Four Unvaccinated Children – Minnesota, August-October 2005. MMWR October 21, 2005.
10. Mitka M. Aging Brings New Challenges for Polio Survivors. JAMA 2007; 296(14):1718
11. Halstead LS, Silver JK. Nonparalytic polio and postpolio syndrome. Am J Phys Med Rehabil. 2000, Jan-Feb;79(1):13.
12. Kelly H et al. Polioviruses and other enteroviruses isolated from faecal samples of patients with acute flaccid paralysis in Australia, 1996-2004. J Paediatr Child Health. 2006 Jun;42(6):370-6.
13. da Silva EE, Winkler MT, Pallansch MA. Role of enterovirus 71 in acute flaccid paralysis after the eradication of poliovirus in Brazil. Emerg Infect Dis. 1996 Jul-Sep;2(3):231-3.
14. Dietz V, Andrus J, Olive JM, Cochi S, de Quadros C. Epidemiology and clinical characteristics of acute flaccid paralysis associated with non-polio enterovirus isolation: the experience in the Americas. Bull World Health Organ. 1995;73(5):597-603.
15. Glass JD et al. Poliomyelitis due to West Nile virus. NEJM 2002;347:1280.
16. Leis AA et al. A poliomyelitis-like syndrome from West Nile virus infection. NEJM 2002;347(16):1279
17. Heresi GP et al. Poliomyelitis-like syndrome in a Child with West Nile Virus Infection. Pediatr. Infect. Dis 2004; 23(8):788.

Human Immunodeficiency Virus (HIV) Laboratory Tests

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A variety of HIV laboratory-testing advances have made it possible to more effectively manage patients and predict response to antiretroviral therapy (ART). For example, viral load tests and measurements of CD4+ T-cell counts help in monitoring the effectiveness of HIV-1 treatment. Now other testing strategies are helping to optimize care of HIV-infected patients and track the epidemic.

In recent years, resistance testing has become an important tool in optimizing combination therapy for treating HIV-infected individuals. The identification of resistance mutations has allowed physicians to select the antiviral agents that have maximum therapeutic benefit and minimum toxic side effects. Antiretroviral drug resistance can be analyzed using either genotypic or phenotypic assays. The genotypic assays detect mutations that confer drug resistance. Phenotypic assays are drug susceptibility assays in which a fixed inoculum of HIV is cultured in the presence of serial dilutions of the different ART to assess viral replication. The determination of the presence of ART drug resistance is now standard of care.

The human leukocyte antigen (HLA) allele, HLA-B*5701, is associated with hypersensitivity reaction (HSR) to the antiretroviral drug, abacavir. This reaction varies in its severity and clinical manifestations. Symptoms include rash, fever, gastrointestinal or respiratory symptoms, arthralgia, myalgia, lethargy or malaise. This wide spectrum of symptoms leads to frequent overestimation of hypersensitivity reaction and to excessive drug discontinuation. The distribution of the HLA-B*5701 allele varies depending on ethnic origin, and determining its presence before treatment with abacavir may be cost-effective.

Based on genetic similarities, the numerous HIV virus strains may be classified into types, groups and subtypes. There are two **types** of HIV: HIV-1 and HIV-2. Both types are transmitted by sexual contact, through blood, and from mother to child, and they appear to cause clinically indistinguishable AIDS. However, it seems that HIV-2 is less easily transmitted, and the period between initial infection and illness is longer in the case of HIV-2. Not all of the drugs used to treat HIV-1 infection are as effective against HIV-2. In particular, HIV-2 has a natural resistance to nonnucleoside reverse transcriptase inhibitor (NNRTI) antiretroviral drugs. Therefore, NNRTI therapy is not recommended. The strains of HIV-1 can be classified into three **groups**: the "major" group M, the "outlier" group O, and the "new" group N. More than 90 percent of HIV-1 infections belong to HIV-1 group M. Within group M there are known to be at least nine genetically distinct **subtypes**

(or clades) of HIV-1. These are subtypes A, B, C, D, F, G, H, J, and K. The present ARTs were developed for use against subtype B, and so theoretically might not be effective against subtypes from other regions of the world. However, there is no data at present to suggest that subtypes differ in their sensitivity to antiretroviral therapy. However, some subtypes may occasionally be more likely to develop resistance to certain drugs. In some situations, the types of mutations associated with resistance may vary. This is an important subject for future research. Historically, subtype B has been the most common subtype in Europe, the Americas, Japan, and Australia. Although this remains the case, other subtypes are becoming more frequent and now account for at least 25 percent of new infections in Europe. It has been observed that certain subtypes are predominantly associated with specific modes of transmission. In particular, subtype B is spread mostly by homosexual contact and intravenous drug use (essentially via blood), while subtype C tend to fuel heterosexual epidemics (via a mucosal route). Altogether, determining the various HIV types, groups and subtypes is very important for epidemiologic and clinical reasons.

2008 SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL DISEASE REPORTING CARD

Disease reporting is required by SC Code of Laws Section 44-29-10, Regulation 61-20, 44-1-110, and 44-1-140. See other side for list of reportable diseases.

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (45 CFR §164.512)

Patient Name Last First Middle		Date of Birth Month / Day / Year	Patient Phone Numbers	Race <input type="checkbox"/> Asian <input type="checkbox"/> Black <input type="checkbox"/> White <input type="checkbox"/> AmInd <input type="checkbox"/> PacIsl <input type="checkbox"/> Unk	Ethnicity <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Not Hispanic or Latino	Sex <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not Stated																								
Patient Address / City / ZIP Code			County	Patient ID or SSN		If Female, Pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No																								
Disease (Include stage, if appropriate)		Symptoms	Date of Symptom Onset: _____		For STD Reporting Treated: <input type="checkbox"/> Yes <input type="checkbox"/> No Treatment Date: _____ Rx: _____	Patient Status <input type="checkbox"/> In Childcare <input type="checkbox"/> Food Handler																								
Date of Diagnosis		If Lyme or RMSF, Rash? <input type="checkbox"/> Yes <input type="checkbox"/> No																												
Laboratory Results		Hepatitis Jaundice: <input type="checkbox"/> Yes <input type="checkbox"/> No AST: _____ ALT: _____ Date: _____	Hepatitis A Results Hepatitis A Antibody (Acute IgM anti-HAV) <input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Unk Hepatitis C Results Hepatitis C - EIA: <input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Unk s/co ratio: _____ Hepatitis C - RIBA: <input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Unk Hepatitis C - PCR: <input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Unk Hepatitis C - Viral Load: _____		Hepatitis B Results <table border="1"> <thead> <tr> <th></th> <th>Pos</th> <th>Neg</th> <th>Unk</th> </tr> </thead> <tbody> <tr> <td>Hepatitis B surface Antigen (HBsAg)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Hepatitis B core Antibody IgM (HBcAb-IgM)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Hepatitis B core Antibody Total (HBcAb)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Hepatitis B surface Antibody (HBsAb)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Hepatitis B e Antigen (HBeAg)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>			Pos	Neg	Unk	Hepatitis B surface Antigen (HBsAg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hepatitis B core Antibody IgM (HBcAb-IgM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hepatitis B core Antibody Total (HBcAb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hepatitis B surface Antibody (HBsAb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hepatitis B e Antigen (HBeAg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Test Date		Specimen Site																												
Responsible Physician & Phone #		Reporting Lab/Facility, Person, & Phone #		Date Reported to Health Dept.		Mail or Call Reports To:																								
For daytime & after-hours phone numbers: www.scdhec.gov/health/disease/docs/reportable_conditions.pdf For after-hours reporting of immediately reportable conditions, call state answering service: 1-888-847-0902 For more information, call the DHEC Bureau of Disease Control in Columbia: 803-888-0861 (MF 9-5)				<input type="checkbox"/> Send More Cards To: (Address)																										
DHEC 1129 (01/2008) DHEC Use Only: County Review Date State Review Date C P S N																														

Reporting required by attending physician/designee and laboratory except where lab only (L) reporting is indicated.

Report IMMEDIATELY By Phone		Urgently Reportable Within 24 Hours By Phone	
Any outbreak or unusual disease or cluster of cases Any potential biological (to include toxins such as ricin), chemical, or terrorist event (1)	<i>Haemophilus influenzae</i> type b, invasive disease (4) (7) Influenza A - Avian or Novel (Not H1 or H3) Measles (Rubella) Meningococcal disease (4) (7) (9) Plague (7) Polio myelitis, Paralytic and Nonparalytic SARS, Severe Acute Respiratory Syndrome Smallpox Viral Hemorrhagic Fever	Arboviral Neuroinvasive Disease (acute infection, including acute flaccid paralysis, atypical Guillain-Barré Syndrome): Eastern Equine Encephalitis (EEE), La Crosse (LAC), St. Louis Encephalitis (SLE), West Nile Virus (WNV) (7) Brucellosis (7) Dengue Diphtheria (7) E-coli, shiga toxin-producing (STEC), including O157:H7 (7) Glanders (<i>Burkholderia mallei</i>) (7) Hantavirus Hemolytic uremic syndrome (HUS) Hepatitis A, acute (IgM Ab+ only) Hepatitis B, acute (HBsAg-IgM+) Melioidosis (<i>Burkholderia pseudomallei</i>) (7) Mumps Pertussis	Q fever (<i>Coxiella burnetii</i>) Rabies (human) Rubella (includes congenital) <i>Staphylococcus aureus</i> , vancomycin-resistant (VRSA/VISA) (7) Syphilis, primary or secondary (lesion or rash) Syphilis, congenital Trichinosis Tuberculosis (7) Tularemia Typhoid fever (<i>Salmonella typhi</i>) (7) Typhus fever, epidemic (<i>Rickettsia prowazekii</i>) Vibrio infections - all types, including <i>Vibrio cholerae</i> O1 and O139 Yellow Fever
Report Within 7 Days			
AIDS (2) Campylobacteriosis Chancroid Chlamydia trachomatis, genital site (L) Creutzfeldt-Jakob Disease (Age < 55 years) Cryptosporidiosis Cytosporiasis Ehrlichiosis Gardiasis Gonorrhea <i>Haemophilus influenzae</i> , non-type b invasive disease (4) (7) Hepatitis B, chronic	Hepatitis B Surface Antigen+ (HBsAg+) with each pregnancy Hepatitis C, D, E HIV-1 or HIV-2 infection (2) HIV CD4 co-receptor (L) HIV CD4 T-lymphocyte count/percentage - all results (L) (2) HIV viral load - all results (L) (2) HIV-HLA B5701 (L) HIV subtype, genotype, and phenotype (L) Influenza, positive rapid flu test (report # of positive results) Influenza, positive virus culture isolates (L) Influenza, pediatric deaths - age < 17 years Lead poisoning (5) Lead tests, all (6) (L, includes office tests)	Legionellosis Leprosy (Hansen's Disease) Leptospirosis Listeriosis (7) Lyme disease Lymphogranuloma venereum Malaria Meningitis, aseptic (8) Pesticide poisoning Psittacosis Rocky Mountain Spotted Fever (RMSF) Salmonellosis (7) Shigellosis (7)	<i>Staphylococcus aureus</i> - Methicillin Resistant (MRSA) Bloodstream infections (L) Streptococcus group A, invasive disease (4) Streptococcus group B, age < 90 days <i>Streptococcus pneumoniae</i> , invasive, (4) (include antibiotic resistance patterns) (3) Syphilis, latent or tertiary Syphilis, positive serologic test Tetanus Toxic Shock (specify staphylococcal or streptococcal) Varicella Varicella death Yersiniosis

Potential agent of Bioterrorism

(L) Only labs are required to report.

For notes 1-10, see complete list of reportable diseases at: www.scdhec.gov/health/disease/docs/reportable_conditions.pdf.

Year-to-Date Summary of Selected Reportable Conditions - January 1, 2007 - November 30, 2007

Condition	Confirmed	Probable	Total
Animal Bite—PEP Recommended	346	*	346
Aseptic meningitis	86	1	87
Botulism, infant	1	0	1
Brucellosis	2	0	2
Campylobacteriosis	244	1	245
Ciguatera fish poisoning	1	0	1
Cryptosporidiosis	77	*	77
Cyclosporiasis	1	*	1
Dengue Fever	1	2	3
Ehrlichiosis- human granulocytic	1	0	1
Ehrlichiosis- human monocytic	1	2	3
Ehrlichiosis- human- other&unspec	1	1	2
Encephalitis- West Nile	2	0	2
Enterohem. E.coli O157:H7	10	0	10
Enterohem.E.coli shigatox+- ?serogrp	1	0	1
Enterohem.E.coli- shigatox+- non-O157	0	0	0
Giardiasis	108	0	108
Group A Streptococcus- invasive	88	0	88
Group B Streptococcus- invasive	34	0	34
Haemophilus influenzae- invasive	45	0	45
Hemolytic uremic synd- postdiarrheal	1	0	1
Hepatitis A- acute	15	0	15
Hepatitis B- acute	64	1	65
Hepatitis B virus infection—Chronic	198	330	528
Hepatitis B virus infection—Perinatal	0	0	0
Hepatitis C- acute	0	0	0
Hepatitis C Virus Infection- past or present	3606	447	4053
Hepatitis Delta co- or super-infection- acute	0	0	0
Hepatitis E- acute	1	0	1
Influenza- human isolates	65	0	65
Legionellosis	16	1	16
Listeriosis	10	0	10
Lyme disease	26	1	27
Malaria	7	0	7
Mumps	1	1	2
Neisseria meningitidis- invasive (Mening. disease)	15	0	15
Pertussis	50	13	63
Rocky Mountain spotted fever	15	48	63
S. aureus, vancomycin intermediate susc (VISA)	2	0	2
Salmonellosis	1041	7	1048
Shiga toxin-producing Escherichia coli (STEC)	13	1	14
Shigellosis	178	12	190
Strep pneumoniae- invasive	303	0	303
Streptococcal disease- invasive- other	6	1	7
Tetanus	0	0	0
Toxic-shock syndrome- staphylococcal	0	0	0
Varicella (Chickenpox)	554	442	996
Vibrio parahaemolyticus	1	0	1
Vibrio spp.- non-toxigenic- other or unspecified	5	0	5
Vibrio vulnificus infection	2	0	2
West Nile Fever	1	1	2
Yersiniosis	5	1	6

Epi-Notes

Division of Acute Disease Epidemiology
SC DHEC
2600 Bull Street
Columbia, SC 29201

**Epi-Notes is published by the South Carolina
Department of Health and Environmental Control
Division of Acute Disease Epidemiology
FOR DISEASE REPORTING**

For immediately reportable conditions, call your local county health department or, for after-hours, call 1-888-847-0902. Routine reports may be phoned in to your local health department or mailed on a completed DHEC DISEASE REPORTING CARD (DHEC 1129). Local

county health department numbers are listed on the Official List of Reportable Conditions. For a copy of the current Official List of Reportable Conditions, call 803-898-0861 or visit

www.scdhec.gov/health/disease/index.htm

THE EPI NOTES NEWSLETTER IS NOW AVAILABLE ON LINE AT

www.scdhec.gov/health/disease/index.htm

Bureau of Disease Control

J. Gibson, MD, MPH, Director
803-898-0861

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Division of Acute Disease Epidemiology**

803-898-0861

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1-800-277-4687

Division of STD/HIV

803-898-0749

Division of Surveillance and Technical Support

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Division of Tuberculosis Control

803-898-0558

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